

## **Comparative Analysis of Learner's Preference to Device based Education Versus Traditional Learning in Higher Education**

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### **Abstract:**

For decades, multiple debates and speculations have been raised by scholars concerning superiority of mode of education. Some argue that distance learning is superior, and others are of view that distance learning has less credibility and effectiveness than traditional/ face to face learning in higher education. However, in this paper comparative analysis of student's preference pertaining to distance learning through desktop/computer with comparison to traditional learning have largely been over looked. This research intends to fill this void in the literature by utilizing Higher Education Service (HES) quality indicators, proposed by Kwan and Ng (1999) in context of a developing country i.e. Pakistan. Moreover, distance learning is still considered as an anomaly ("step child") in developing countries, despite of emerging technological advancements in higher education. Therefore, in future impact of portable devices (i.e. tablet, laptop, mobile etc.) should be investigated to reflect the new paradigms pertaining to distance learning.

**Keywords** Traditional learning, Distance education, Local area network (LAN), Higher education service (HES) quality indicators

### **1. Introduction**

In all aspects of life, myriad dramatic advancements have occurred in the last decade of 20<sup>th</sup> century and the beginning of 21<sup>st</sup> mainly due to exponential proliferation of internet and modern telecommunications (Henderson, Selwyn and Aston 2017). Education system, in entire world, have been influenced by said technological advancements; hence led towards innovative techniques and approaches of and for providing education (Martín-Gutiérrez et al. 2017). Developed countries have made a lot of transformations in their education system from traditional/ face to face learning method to new and advance platforms and delivery techniques “i.e. correspondence, Internet-online, one-way, two-way audio and video”, on a large scale referred as Distance education (Gelpi 2018, Shachar and Neumann 2010).

Now-a-days in developed countries, widespread of distance education can be clearly observed due to its large scale progress in concept and practice where applicable, encompassing a notion of “anywhere” to an “anytime” to an “any pace” delivery method (Alsaaty et al. 2016). However, developing countries are still far behind in successful adoption of distance education due to scarcity of various opportunities pertaining to “advanced technologies, lack of funds, and poorly implemented strategies, so on and so forth” (Sobaih 2016). Usage of technological devices is not new in process of distance education as various devices have been utilized in this context i.e. TV, radio, desktop/ computer, tablet, other mobile devices (Potkonjak et al. 2016, Yusuf 2006). However, multiple researches stressed that in higher education of developing countries, traditional/ face to face learning has still got preference over distance education due to manifold said reasons.

While the academia and training communities raised a lot of questions regarding credibility and effective working of technological delivery methods that are being utilized in distance learning, which continuously “examined, assessed, criticized, hallowed and demonized” them (Faith 2017). The basic concern was shown regarding the quality of distance learning method when compared with traditional/ face to face learning. This concern was raised in four coursework delivery domains: “i.e. (1) student attitude and satisfaction, (2) interactions of students and faculty, (3) student learning outcomes, and (4) faculty satisfaction” (Shachar and Neumann 2010, Gallagher and McCormick 1999).

All these factors triggered an extensive debate and research regarding assessing quality of these programs. Thus, a plethora of new researches on said subject emerged with a major focus on examining multiple characteristics of teaching and learning in a comparative environment of traditional vs. distance education (Shachar and Neumann 2010). These researches encompassed diverse areas and subjects and across academia “i.e. primary, secondary, tertiary” and professional levels “i.e. medical clinical and management training and development” (Lee 2017, Westwood 2001). Consequently, radical interest got intensified by experts regarding examining quality aspect of these learning methods, since assessment of quality is significant and a complex task anyway (Lee 2017, Gress, et al. 2010).

## **2. Higher Education Service (HES) quality indicators**

Previous researches clearly exhibit that service quality encompasses the concept of assessing how well customer expectations have been fulfilled (Lewis and Booms 1983). Besides this, consumers are deemed to be the most pivotal element in context of service quality (Kessler 1995). Moreover, the concepts and parameters of service quality are not ambiguous in terms of higher education. Reeves and Bednar (1994)

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highlighted regarding higher education that one universal definition of service quality does not exist in this domain; hence, standard concepts of service quality should be considered significant in subject of higher education.

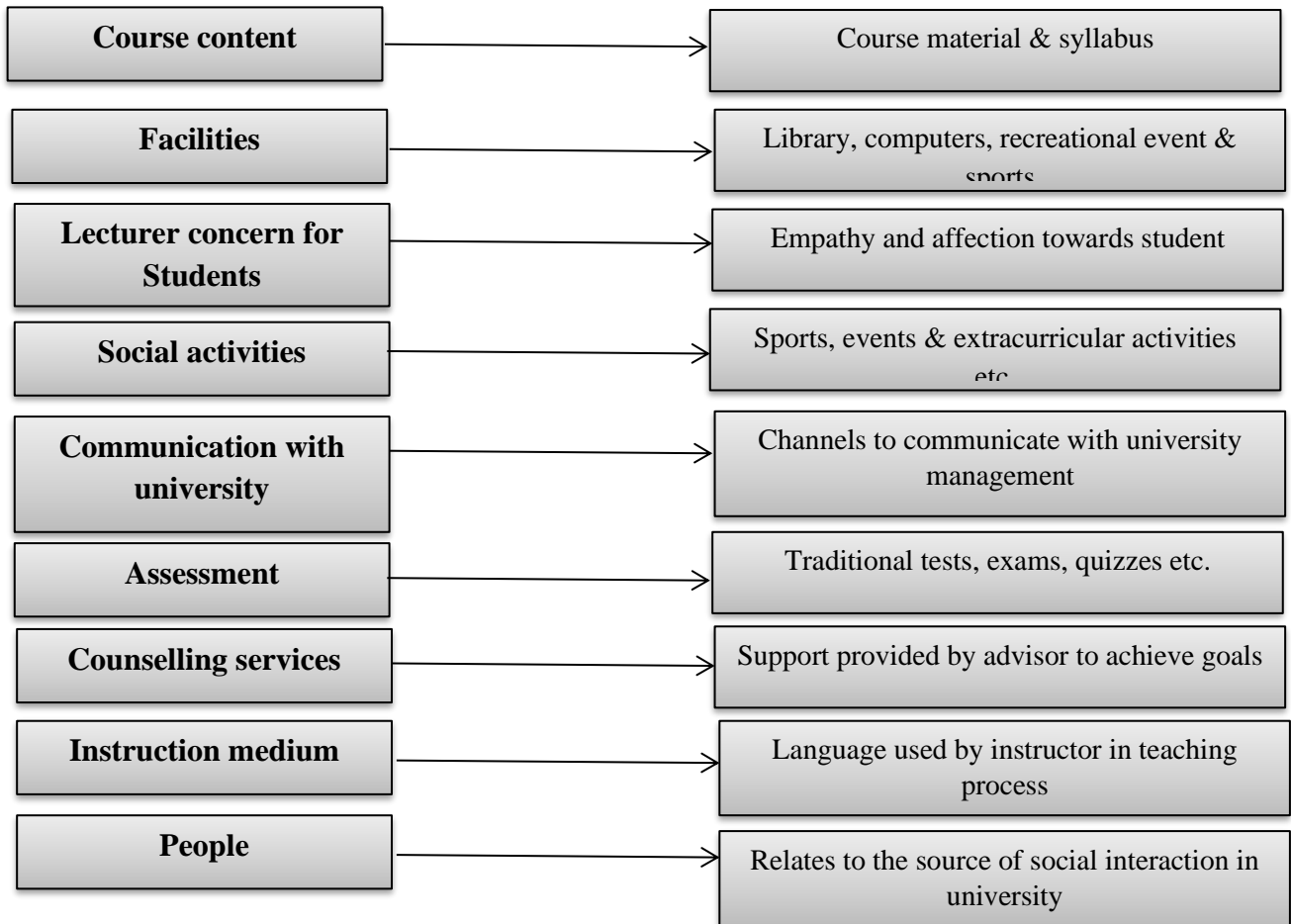
In line with this, in order to examine the quality and standard of education provided by universities, Kwan and Ng (1999) proposed a well-defined set of higher education service quality indicators that have been utilized by numerous studies (Peng et al. 2006, Watson, Saldaña and Harvey 2002).

These HES quality indicators have been applied particularly in university sector. Kwan and Ng (1999) heavily emphasized that many-a-times, cultural traditions and orientation strongly impact perception and expectation of students. Therefore, a survey was conducted by Kwan and Ng (1999) in China and Hong Kong, to investigate the impact of cultural variables in the context of service quality. For examination purpose, factor analysis was used by Kwan and Ng (1999) to figure out seven factors for each of the two universities in China and Hong Kong respectively (see Table 1).

**Table 1. Factors of Kwan and Ng studies in Hong Kong and China**

<b>Quality of Education Factors (Hong Kong)</b>	<b>Quality of Education Factors (China)</b>
Course Content	Course Content
Concern for Students	Lecturer's Concern for Students
Facilities	Facilities
Assessment	Assessment
Social Activities	Social Activities
Medium of Instruction	Counselling Services
People	Communication with University

Figure 1 depicts the nine factors of higher education service quality indicators, proposed by Kwan and Ng (1999); whereas, the duplicated factors/ variables have been removed from following HES quality indicators (see figure 1).



**Figure 1. Higher Education Service (HES) Quality Indicators**

### **3. The utilization of desktop /computer in distance learning versus face-to-face learning in higher education**

Education is deemed to be the fundamental pillar of modern economy, which is the reason why researchers and scholars are putting efforts to ensure and achieve high service education quality (Clarke 2018). In developing countries, the proliferation of distance education through modern delivery tools and methods raised concerns pertaining to effectiveness of this educational setting (Banner 2016). Although in developing countries, distance education related programmes still face diverse credibility and validity concerns, which not only stirred hindrances for students in achieving recognition for their work but also caused multiple grooming and socializing issues (Rumble and Harry 2018, Altbach and Knight 2007, Bates 2005).

Throughout the world, a number of technologies have been utilized in the learning procedure of distance education i.e. TV, radio, desktop/ computer, tablet, laptop and other mobile devices (Potkonjak et al. 2016, Yusuf 2006); however, in present study comparative analysis of distance learning through desktop/ computer in comparison with traditional/ face to face learning has been discussed in setting of a developing country i.e. Pakistan. Basically, a desktop/ computer is a location constrained technological device with a

keyboard and monitor, which has the capability of data processing such as a personal computer and personal digital assistant (Wong, Aggarwal and Beebee 2005). Computer-supported collaborative learning (CSCL) is a pedagogical method in which primary source of learning is through social interaction using a desktop/ computer or through the Internet. The desktop/ computer facilitates and provides a network platform so that skills and knowledge can be transferred (Ouamani et al. 2013)

While distance learning is gaining popularity, it is not free from criticism. A lot of educators and researchers do not favor distance learning because they do not consider it actually an effective method that solves challenging teaching and learning difficulties (O'Callaghan et al. 2017). These issues regarding desktop/ computer learning include "the changing nature of technology, the complexity of networked systems, the lack of stability in online learning environments, and the limited understanding of how much students and instructors need to know to successfully participate" (Kay 2012). While multiple researches expressed their concerns that distance learning also threatens to "commercialize education, isolate students and faculty, and may reduce standards or even devalue university degrees" (Shachar and Neumann 2010, Johnson, Aragon and Shaik 2000). Multiple studies highlighted that while comparison with traditional learning, dropout rate of online learning is nearly 10-20% higher (Salomon 2016), majorly due to perception of lower quality (Arkorful and Abaidoo 2015, Lykourantzou et al. 2009), and also due to other factors "i.e. degree of usefulness, completion factor, and societal distance" (Gress, et al. 2010).

Gaining knowledge about the processes and outcomes of online instruction as compared to traditional face-to-face environments will help educators and researchers make more informed decisions about future online course development and implementation. Therefore, it is imperative to accurately determine the advantages and pitfalls of distance learning through particularly desktop, when compared to traditional/ face to face learning method. The objective of this study is to examine the preference of students regarding favorable learning method in higher education of a developing country i.e. Pakistan, by conducting comparative analysis of distance learning through desktop/ computer versus traditional/ face to face learning. For this purpose, higher education service (HES) quality indicators by Kwan and Ng (1999), have been used in present study. While HES quality indicator number eight i.e. Instruction medium, is not applicable for this study, since two said instructional mediums have already been chosen to explore student's preference.

#### **4. Methodology**

The objective of this descriptive research was to investigate and describe the significant characteristics after comparative analysis of two learning environments ("i.e. traditional/ face to face learning & distance learning through desktop/ computer") in a developing country's higher education sector i.e. Pakistan. For present study, reason behind selecting descriptive research as a methodological tool was because it assists researcher to meaningfully describe data in numeric indices (Alsaaty et al. 2016, Maxwell 2012). Furthermore, population for this study consisted of students that were enrolled in business programmes i.e. "BBA Hons, BS Applied Management, MBA, MBA Engineering and MBA Executive". The sample in this study included graduate and undergraduate students taking business courses in two leading Pakistan's private and public sector universities. In order to access student's preference pertaining to two mentioned learning environments, researcher utilized Higher Education Service (HES) quality indicators by Kwan and Ng (1999). Further adding to this, convenience sampling was chosen as sampling technique and initially,

data was gathered from 560 respondents of higher education. Whereas, due to missing values, normality and skewness concerns, only 518 responses were considered authentic for this study.

The research instrument to investigate preference of students was questionnaire, designed on five points rating (Likert) scale. In order to enhance validity and credibility of data, pilot testing of research tool was conducted from university students. The Statistical Package for Social Science (SPSS) was applied on final data of 518 respondents to elicit information in context of descriptive statistics and average values of responses. The values assigned to questionnaire were indicating 1 as “Strongly Disagree”, and 5 as “Strongly Agree”. The analysis of the descriptive statistical data from this study assisted in provision of clear results to better address issues of said learning environments.

## 5. Data analysis and results of the study

### 5.1. Demographic profile of students

Table 2 exhibit the demographic profile of respondents that participated in this study, in which percentage of male respondents was 59.1%; whereas, percentage of female respondents was 40.9%.

**Table 2. Demographics**

Demographics	Frequency	Percentage
• Gender		
• Male	306	59.1
• Female	212	40.9
• Age		
• 15-20	122	23.6
• 21-25	359	69.3
• 26-30	23	4.40
• 31-Above	14	2.70
• Education		
• BBA	349	67.4
• MBA	116	22.4
• EMBA	35	6.80
• MBA. Eng.	18	3.50

The data further indicated that out of 518 respondents, the percentage of students between age brackets of 21-25 years was 69.3%, while 23.6% respondents were in the category of 15-20 age groups. Similarly, age brackets of 26-30 years encompassed the percentage of respondents i.e. 4.40%, and age brackets of 31 and above years of age turned out to be the lowest category with percentage of 2.70%.

Table 2 further illustrates the segregation of education/ academic programs into four divisions i.e. BBA, MBA, EMBA, and MBA Eng. Data show that with 67.4%, Bachelors (BBA) programme got highest value after performing analysis; whereas, 22.4% of students were enrolled in Master (MBA) programme. Moreover, Professional degree programmes, i.e. Executive MBA and MBA Engineering, got value of 10.3% in this study. It can be clearly observed that the age bracket of 15-25 turned out to be the highest value category (i.e. 92.9%) with majority of students.

## 5.2. Student’s preference in context of distance learning through desktop vs. traditional learning against HES Quality Indicators

In present study, multiple characteristics of two learning environments (i.e. face-to-face and distance education through desktop/ computer) were analyzed by utilizing higher education service quality indicators, proposed by Kwan and Ng (1999). In order to access student’s preference regarding following HES quality indicators i.e. “Course content, Facilities, Lecturer’s Concern for Students, Social Activities, Communication with University, Assessment, Counselling Services & People”, a 5-point likert scale has been adopted in this study. Comparative analysis on collected data was performed in terms of average responses against HES quality indicators pertaining to examine student’s preference towards learning through desktop versus traditional learning environment (see table 3).

**Table 3. Face to face VS Desktop/computer preference**

Higher Education Service (HES) Quality Indicators	Face to Face	Desktop/ Computer
1. Course Content	3.76	3.28
2. Facilities	3.74	3.36
3. Lecturer’s Concern for Students	4.05	3.26
4. Social Activities	2.90	3.13
5. Communication With University	3.66	3.32
6. Assessment	3.53	3.22
7. Counselling Services	4.22	3.23
8. People	4.40	3.13

By considering average responses results in table 3 across higher education service quality indicators, several reasons may account for positive and favorable responses regarding traditional learning as oppose to distance learning through desktop. Thus, it is evident that majority of students highly preferred traditional learning environment due to manifold reasons that are discussed in following text.

**Course Content:** Course content encompass the concept of course curriculum and entire material that is deemed vitally significant for a particular course. A majority of students preferred traditional/ face-to-face learning environment for this HES quality indicator, having an average of 3.76. While learning through desktop/computer is the second preferred factor with an average of 3.28. It can be inferred from results that students prefer face to face interaction that gives them an opportunity to dialogue with instructor about the content and its delivery method. Moreover, it facilitates students in terms of receiving multiple examples and illustrations direct from the instructor.

**Facilities:** In recent times, students place a higher value on the academic offerings and especially facilities provided by universities, i.e. sports, cafeteria, library, computer and other recreational events. For this HES quality indicator, the first preference has been achieved by face-to-face learning method with an average of 3.74. However, the idea of utilizing facilities through desktop got second preference with an average of 3.36. It implies that students perceive direct utilization of facilities convenient, since traditional learning method enables them to meet for an extended period of time, provides an opportunity for collaborative learning, facilitates in discussion of class projects, and assists in building social relationships.

**Lecturer's Concern for Students:** The third quality indicator of HES i.e. Lecturer's concern for students, refers to positive attitude and personal attachment of teachers towards their students. Since teachers play a pivotal role in terms of providing fundamental support for student's mental and emotional development. Table 3 exhibits clearly that student's preference fall towards face-to-face interaction over device. For this HES quality indicator, traditional method got an average of 4.05; whereas, desktop got second rank with an average of 3.26. Considering the fact that, because of proximity reasons, distance learning students do not enjoy the same amount of affection and friendly communication with teachers as the face-to-face students. Hence, it is reasonable to assume that direct student/teacher interaction is deemed to be one of the significant components for students.

**Social Activities:** Social activities are referred as interactional medium for students as besides academic activities, student's engagement in social activities is a critical factor contributing to the overall student's success studying in higher education institutions. It includes societies & clubs, recreational & academic competitions, job fairs, and technology oriented social networking platforms. In this HES quality indicator, a clear shift has been noticed from face to face to device (see table 3). First preference of respondents for social activities is desktop, having an average of 3.13; whereas, face to face learning method got place at second rank with an average of 2.90. However, a close gap exists between average values which indicate that students want some social activities on device as they tend to find it convenient to interact irrespective to time and place limitations.

**Communication with University:** This HES quality indicator i.e. Communication with university, provides communication channels that not only enable students for successful career development but also assist in their study and social networking with fellows. A majority of students with an average of 3.66 preferred face to face method for this indicator; whereas, desktop came up as second priority with an average of 3.32. It is logical because desktop is connected through LAN (Local Area Network), which hampers its portability; hence, students do not tend to find hassle in direct communication with teachers and management of university.

**Assessment:** In order to measure the quality of an institution's offering in higher education and effectiveness of an educational institute, assessment is deemed to be a crucial component. Assessment, being sixth HES quality indicator, encompasses assessments schemes of students through quizzes, exams, assignments etc. Table 3 clearly exhibits that majority of participants have given more weightage to traditional learning method in this context, having an average of 3.53. While desktop got place at second preference with an average of 3.22. Considering the fact that in face to face method, students tend to receive live and interactive form of support and direct feedback from instructors. Whereas, online students receive feedback in a form of one way static communication; hence, direct interaction seems to be hassle free.

**Counselling Services:** Counselling services and guidance are deemed to be an indispensable component of a higher education institution. This quality indicator of HES measures availability of teachers and advisors in terms of mentoring students for their personal and academic lives. Students have preferred face to face interaction for this HES quality indicator, having an average of 4.22. While desktop has been chosen by students as second preference, having an average of 3.23. It is logical since in face to face method, students have an opportunity of direct conversation and interaction with teachers/ advisors; however, this "dialogue" take place through "mails, chat discussions, phone calls, and synchronous hour discussions" in learning through desktop.



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**People:** The last HES quality indicator i.e. People, is related to the concept of interactive opportunities provided by university so that students can interact with their fellows and build social networking. Considering information in table 3, traditional method/ face to face interaction has been clearly preferred by majority of students, with an average of 4.40. Whereas, desktop is second preferred device with an average of 3.13. It can be inferred from results that face to face setting allows students to meet people in person and explore characteristics of their personalities, which would enhance awareness and social bonding with fellow students.

In table 3, results obtained from statistical averages of 518 students clearly exhibit that distance learning through desktop got complete rejection in comparison with traditional learning in 7 out of 8 higher education service quality indicators i.e. course content, facilities, lecturer's concern for students, Communication with university, assessment, counseling services and people. Desktop got preference in just one quality indicator i.e. social activities; however, close gap prevails between values of both learning methods for this indicator that highlights probably students want to experience some other portable device.

### 6. Conclusion

While traditional learning approach in higher education may have been looked down upon due to proliferation of advance technology, still it has clearly become well accepted and gained legitimacy over various technological devices (i.e. TV, radio, and desktop) that are being utilized in distance learning in developing countries. The present study examined comparative analysis of student's preference pertaining to distance learning through desktop/ computer in comparison with traditional/ face to face learning by utilizing higher education service quality indicators, proposed by Kwan n Ng (1999). Students were chosen as respondents from two higher education universities of Pakistan. The findings of present study based on overall average results revealed that traditional learning got highly preferred across 7 out of 8 higher education service quality indicators (i.e. course content, facilities, lecturer's concern for students, Communication with university, assessment, counseling services and people), which clearly exhibit complete rejection of desktop/ computer for distance learning in Pakistan. The fundamental reason behind such complete rejection is that desktop being location constrained device hampers students from carrying and using it anywhere and at any time. Since desktop has to be connected with a Local Area Network (LAN) for proper functioning that is a major hindrance in its portability factor. Hence, students probably want to switch towards other portable devices, which would be ubiquitous in nature.

The findings of this study further emphasize that probability of attaining learning outcomes in distance learning could be greater through portable devices i.e. tablet, laptop, mobile phone etc.; therefore, impact of these portable devices should be checked in context of distance learning in developing countries. Hence on one hand, different treatment should be given to distance learning in future by regulatory agencies and policy makers, and on other hand, future researches should examine distance education by utilizing portable devices i.e. tablet, laptop, mobile etc. Thus in this study, the paradigm of the superiority of face to face learning method has got complete acceptance over distance learning through desktop. However, one should not be surprised if the gap between distance learning through portable devices and traditional learning will only widen in the next decade.

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